

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A catalyst for hydrotreating gas oil, which comprises on an inorganic oxide support 10 to 40% by weight of at least one metal selected from metals in the Group 6 of the periodic table, 1 to 15% by weight of at least one metal selected from metals in the Group 8 of the periodic table, 1.5 to 8% by weight of phosphorus, each in terms of an oxide amount based on the catalyst,

an organic acid at from 2 to 14 wt% as an amount of carbon derived from the organic acid based on the catalyst, and

wherein the organic acid is contained in an amount of from 0.2 to 1.2 moles relative to 1 mole of the metal of Group 8 of the periodic table, and

wherein the catalyst has a specific surface area of 150 to 300 m²/g, a pore volume of 0.3 to 0.6 ml/g, and an average pore diameter of 96 to 140 Å, and

wherein, when the catalyst is observed on a diffuse-reflectance FT-IR after sulfidation treatment and subsequent NO adsorption, a value of I₈ group/(I₈ group + I₆ group) is within the range of 0.7 to 1 wherein intensity of NO spectrum (1840 cm⁻¹) adsorbed on the metal in the Group 8 of the periodic table is represented by I₈ group and intensity of NO spectrum (1700 cm⁻¹) adsorbed on the metal in the Group 6 of the periodic table is represented by I₆ group.

2. (original): The catalyst according to claim 1, wherein the catalyst has a pore distribution that a ratio of pores having a pore diameter of the average pore diameter ± 15 Å is from 30 to 75%.

3. (original): The catalyst according to claim 1 or 2, wherein an average number of laminated layers of disulfide of the metal in the Group 6 of the periodic table observed through a transmission electron microscope after presulfidation of the catalyst is from 2.5 to 5.

4. (original): The catalyst according to claim 1 or 2, wherein an average in-plane-direction length of layers of disulfide of the metal in the Group 6 of the periodic table observed through a transmission electron microscope after presulfidation of the catalyst is from 1 to 3.5 nm.

5. (currently amended): A process for producing the catalyst of any one of claims 1 to 4 or 2, which comprises supporting 10 to 40% by weight of at least one metal selected from metals in the Group 6 of the periodic table, 1 to 15% by weight of at least one metal selected from metals in the Group 8 of the periodic table, 1.5 to 8% by weight of phosphorus, each in terms of an oxide amount based on the catalyst,

and an organic acid at from 2 to 14 wt% as an amount of carbon derived from the organic acid based on the catalyst and in such a manner that a molar ratio of organic acid/Group 8 metal of the periodic table is from 0.2 to 1.2 on an inorganic oxide support having a specific surface area of 230 to 500 m²/g, a pore volume of 0.5 to 1 ml/g, and an average pore diameter of 96 to 120 Å, using a solution comprising the metal in the Group 6 of the periodic table, the metal in the Group 8 of the periodic table, an the organic acid, and phosphoric acid, followed by drying at a temperature of 200°C or lower.

6. (currently amended): A process for hydrotreating gas oil, which comprises subjecting a gas oil fraction to a catalytic reaction in the presence of the catalyst of any one of claims 1 to 4 or 2 under conditions of a hydrogen partial pressure of 3 to 8 MPa, a temperature of 300 to 420°C, and a liquid hourly space velocity of 0.3 to 5 hr⁻¹.